

User Manual



SD-30 P/A – Single Button Analog Door Phones

Door Access Control with Analog Telephony Interface

Release 1.18_U2

October 2015



NOTICE

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Declaration of Conformity

Nista Devices GmbH. hereby declares that the Nista Devices GmbH Door Phone products SD-30X and SD-30X series models complies with the essential requirements specified in the directive 1999/05/EC on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity.

The technical documentation as required by the conformity Assessment procedure is kept at the following address:

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1 Cautions

Please read this User Manual carefully before using the product. Follow all instructions and recommendations included in manual.

Any use of the product that is in contradiction with the instructions provided in manual may result in malfunction, damage or destruction of the product.

The manufacturer shall not be responsible for any product damage incurred as a result of a use of the product other than that included in manual and disobedience of the recommendations and warnings mentioned in manual.

Any use or connection of the product other than those included in manual shall be considered undue and the manufacturer shall not be responsible for any consequences arisen as a result of such product usage.

Moreover, the manufacturer shall not be liable for any damage or destruction of the product incurred as a result of incompetent installation and/or undue operation and use of the product in contradiction with instructions described in manual.

The manufacturer assumes no responsibility for any malfunction, damage or destruction of the product caused by incompetent replacement of parts or due to the use of reproduction parts or components.

The manufacturer shall not be liable and responsible for any loss or damage incurred because of a natural disaster or any other unfavorable natural condition.

The manufacturer shall not be responsible for any damage of the product arising during the shipping thereof.

The manufacturer shall not make any warrant with regard to customer data loss or damage.

All applicable legal regulations concerning the product's installation and use as well as provisions of technical standards on electric installations have to be obeyed. The manufacturer shall not be liable and responsible for damage or destruction of the product or damage incurred by the consumer in case the product is used and handled contrary to the said regulations and provisions.

The consumer shall immediately change the default access password for the product after installation. The manufacturer shall not be responsible for any damage incurred by the consumer in connection with the use of the default product password.

The manufacturer also assumes no responsibility for additional costs incurred by the consumer as a result of making calls using a public or another telephony line with an increased tariff.

2 Product Overview

This manual provides installation and programming instructions for the following products models:

- Analog Door phone with the Touch or Piezo **Single Button**: SD-30A ,SD-30P,

Model	Front Panel Description
SD-30A	Plastic Panel with Touch Sensitive Single Button
SD-30P	Aluminum Panel with Piezo Single Button

Basic Features

- PBX extension (SLT) analog line interface
- Single button front panel
- Piezo outdoor and Touch indoor single button housing
- Day and Night calling to different pre-defined operators
- Direct call to a local and remote destinations
- Door opening from remote extension during conversation
- Telephony connection control:
 - Busy tone detection
 - Telephony line Loop disconnection detection
 - Continuous tone detection and disconnection
- External Video Camera 12VDC power support
- Local and Remote maintenance
- Administrator Login password protection
- Digital volume control
- The electrical door lock powering support
- Anti-vandal housing (SD-30P)
- Reliable and stylish design
- Indoor unit backlit button (SD-30A)
- Easy to install and support

3 The Door Phone kit content

The contents of the analog door phone are as follows:

- The Door phone unit
- External ~12V AC / 1.6 A power supply
- Installation bracket
- Installation kit which includes wall installation dowels and screws
- Installation drill template
- Enclosure opening secret screw with a key

Note:

1. SD-30x devices supports the external video camera only. The product's package doesn't include the video camera

4 The Door Phone Man Machine Interface (MMI)

The Door Phone front panel contains a built-in speaker, a microphone and Piezo or Touch-keypad

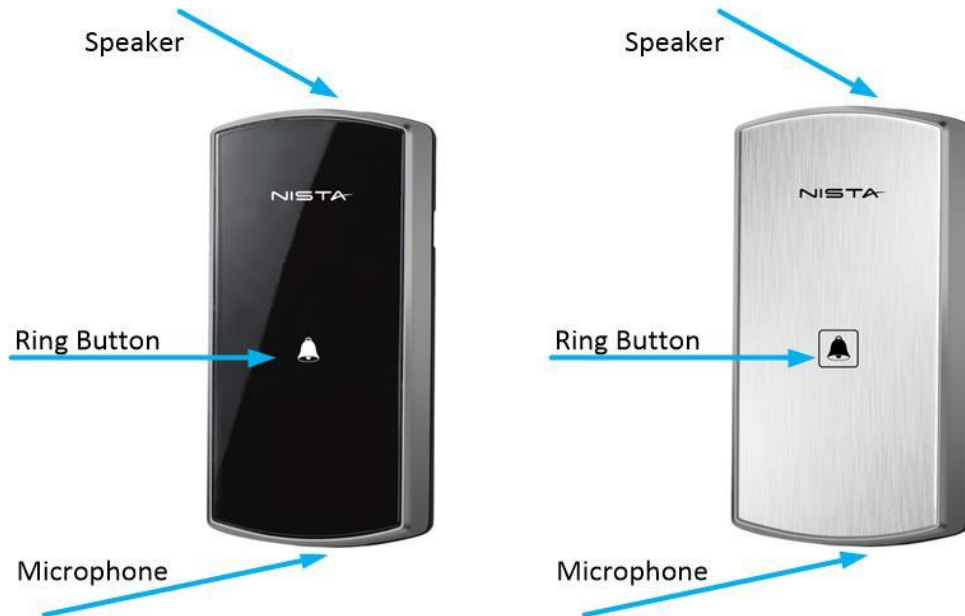


Figure 4-1 The SD-30 A/P Analog Door Phone Front Panel (Touch and Piezo Keypads editions)

The internal speaker directed to a rear housing part.

The SD-30 A/P Analog Door Phone supplied with Piezo and Touch single button front panel editions.



Figure 4-2 SD-30A (left) and SD-30P (right) Analog Door phones, Single button edition

5 The Analog Door Phone Schematic setup

- The Door Analog unit can be integrated with the office PBX (PABX) as simple analog extension/telephone (SLT).
- The unit powers the door lock, provided it is powered by an external supply
- The unit powers the door lock, provided it is powered by its internal relay's pins (See **Error! Reference source not found.**)
- The unit dials to predefined 'Day' and 'Night' operators via PBX
- The unit opens doors by using the Bypass Switch button
- The unit provides 12VDC power to external video camera

Figure 5-1 details the unit schematic setup.

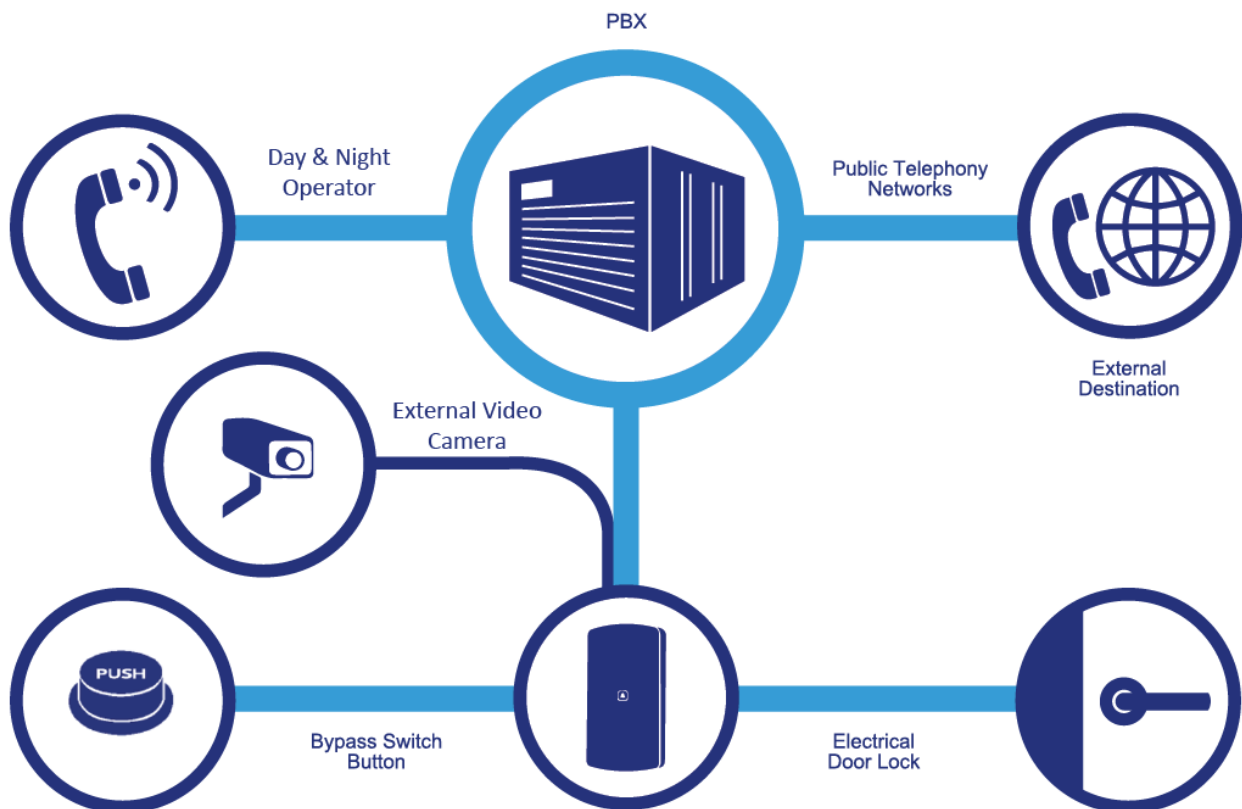


Figure 5-1 The SD-30x Analog Door Phone schematic setup

6 Installation

6.1 Physical installation

The Door phone can be mounted on the installation bracket provided with the unit.

To install the Door Phone Touch keypad on the wall:

Open the Door Phone case by rotating the secret screw on the bottom of the unit.

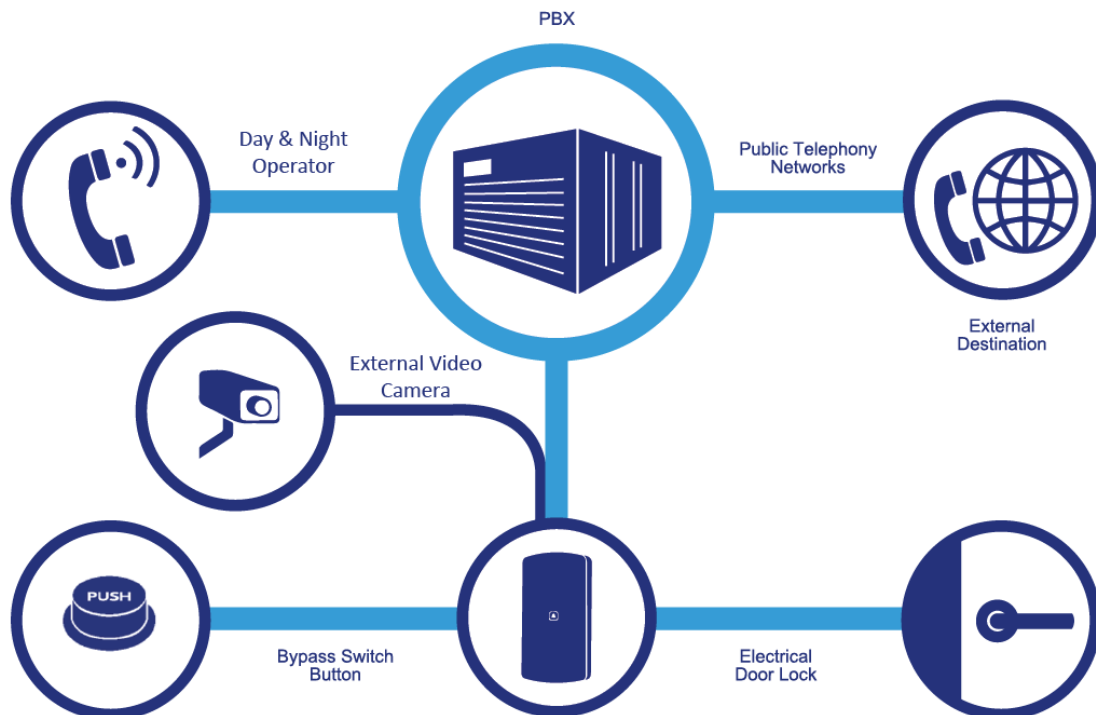


Figure 6-1 Door Phone wall installation

To install wall bracket:

1. Measure and mark the location of the holes on the wall, where holes will be drilled.
2. Drill the holes and insert the wall dowels into the holes.
3. Attach rubber mat on the wall and then metal installation wall bracket using the provided wall screws. (See Figure 6-1). The rubber mat shall be directed to a wall with the rugged side.
4. Connect all required wired connections
5. Put the Door Phone's front panel into the latch, then close the case and lock the secret screw

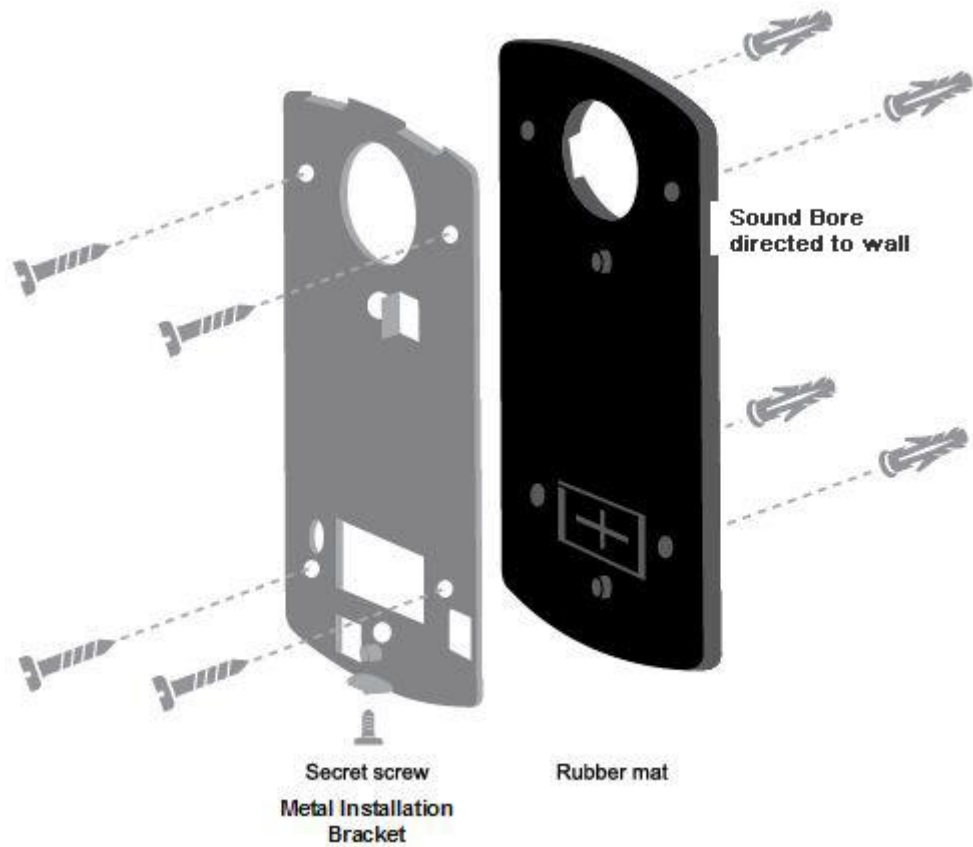


Figure 6-2 Installation bracket

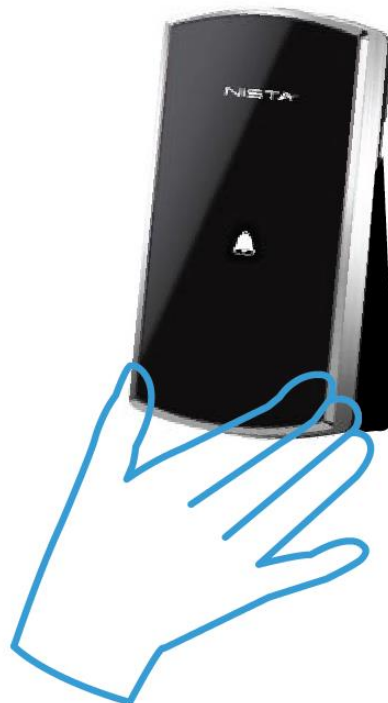


Figure 6-3 Closing the Door Phone house

6.2 Electrical connections

The wiring connector is a screw-connector type. In order to attach a wire, you must insert the stripped end of the wire into the appropriate wire connector's pin and tighten the terminal screw. This will bring together the wire connection.



To avoid damage to the Door Phone, the external power supply should be disconnected from mains prior to connecting wires to the Door Phone unit.

1. Remove the keypad panel cover from the Door Phone unit and find wire connectors at the PCB module. (See **Error! Reference source not found.**)
2. Connect the two 12V lead wires from the 12V AC power adapter, one to each of the “~12V” pins.
3. Connect the two PBX analog extension wires, one to each of the “LINE” pins.
4. Connect the door-lock relay wires to the “DLR” and “~DLR” terminals if the electrical door-lock relay is a powered-locked-state type lock, or otherwise connect the door-lock relay wires to the “/DLR” and “~DLR” terminals.
5. If a bypass switch button is used, connect the button wires to the “SW” and the “/SW” terminals.
6. Plug the wire connectors to the Door Phone PCB module.
7. Attach the Door phone onto the installation bracket.
8. Switch On the external power supply.

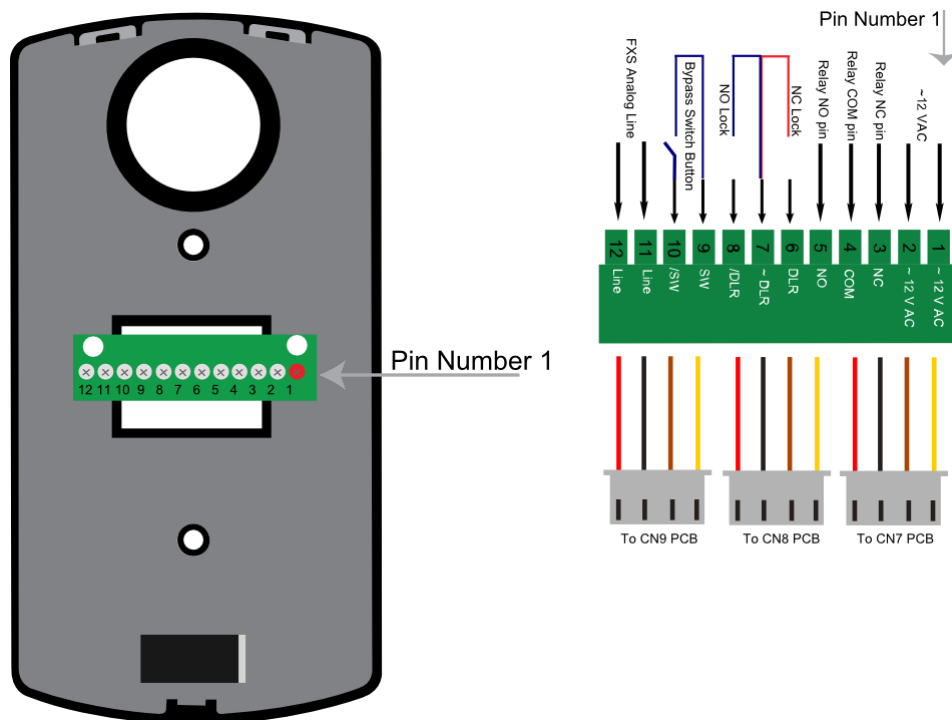


Figure 6-4 SD-30X Model External interfaces connector

SD-30X family devices connector is due-sides connector and includes 2 set of connections:

- Connections to peripheral interfaces See Figure 6-4
- Connections to SD-30X PCB on-board sockets CN7, CN8 and CN9.

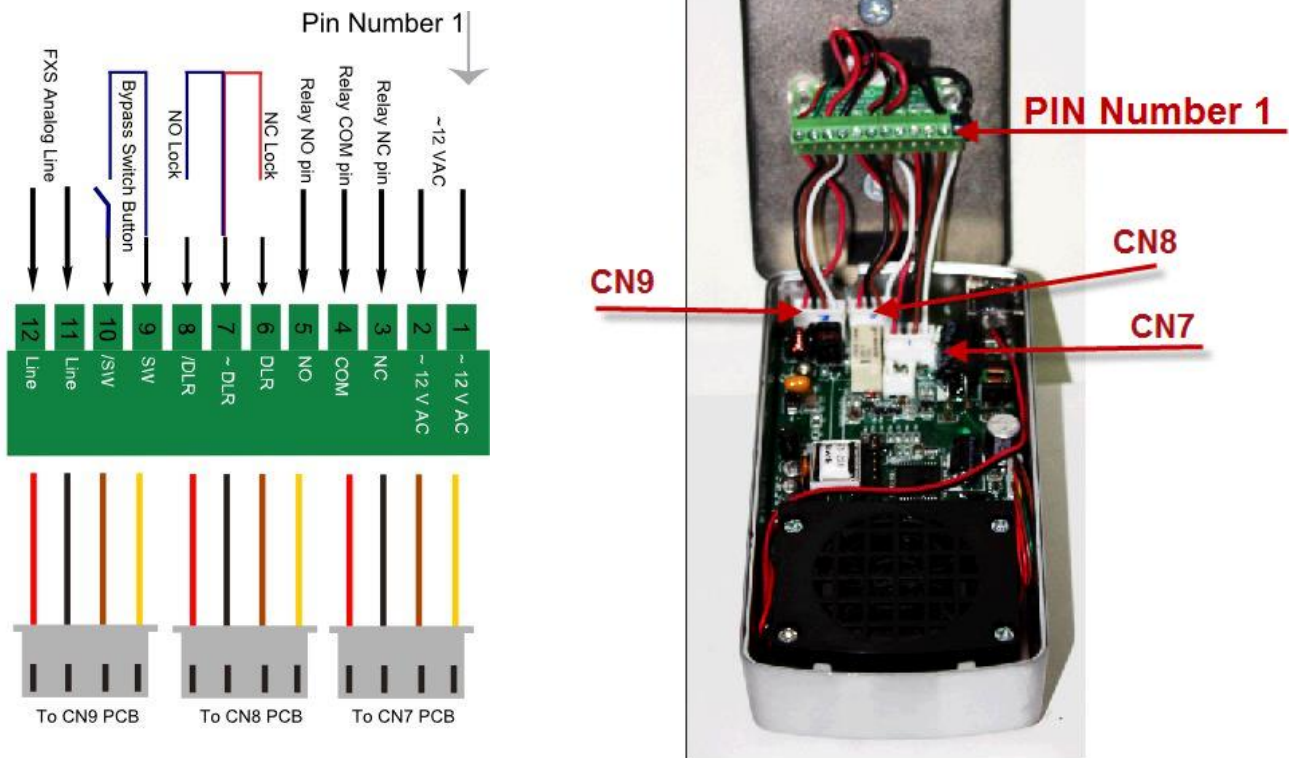


Figure 6-5 SD-30X Connector PCB Connections



Check CN7, CN8, CN9 connector's correct connection with appropriate PCB sockets during SD-30x installation procedures (See Figure 6-5). Incorrect connections can damage the unit

Note:

1. ~DLR/DLR(/DLR) pins provide voltage to electrical door lock. The maximum supported electrical current is 2A

6.3 External Video Camera powering connector

The SD-30 A/P Door phones provides an option to power the external video camera with 12V DC voltage. The power supplies via 2-pin connector installed on PCB board.

Video camera powered in accordance with configuration rules and use cases (See DTMF programming code ***300** Chapter 8.4)

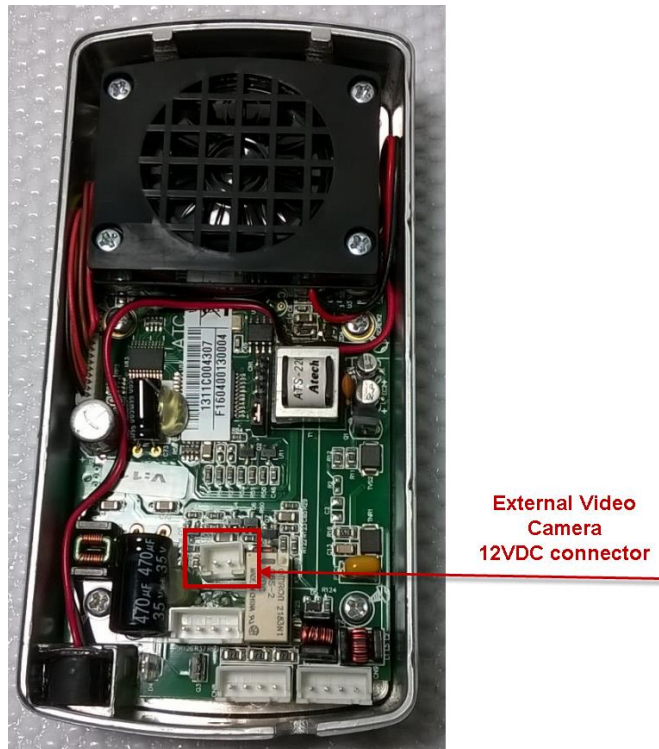


Figure 6-6 The SD-30x External Video Camera powering connector

7 User's Operations

Note:

1. Pressing the 'Ring' button a second time performs the "Call Cancellation" function.

Note:

1. The 'Door Opening Time' interval can be configured by using the Door Phone programming codes (See also Chapter 8.4)
2. The default Door opening time is **3** seconds

7.1 Door opening by using the External Switch button

The Door phone supports an external switch button installation. This allows the door opening with a hardwired switch button. Switch button should be connected to the SW and /SW terminals. (See **Error! Reference source not found.**)

The door will be opened, regardless of the Door Phone telephony connection status.

7.2 Call to the Day / Night Operator

Door phone can operate in 'Day' and 'Night' modes. The Operator destination number can be configured for each

mode separately. The number will be dialed when pressing  button.

To dial Operator:

- Press on the  button
- Door phone dials to a preconfigured Operator number, depending on the Operational mode: Day or Night

Note:

1. Day and Night operational modes can be switched manually by System Operator by using incoming call to a unit, enter to programming mode and appropriate DTMF code (See Chapter 8.2)
2. The default Operator destination numbers are empty and must be configured by using Door Phone programming codes (See also Chapter 8.4)

7.3 Door opening from PBX Extension by using the Extension's Door Opening Code

Called Destination can open the door for guests remotely by dialing the 'Extension's Door Opening Code' in conversation mode.

To open a door from Extension:

- Call to destination as described in Chapters: 7.1, **Error! Reference source not found., Error! Reference source not found.**
- Wait till destination answers
- Destination extension can dial the 'Extension Door Opening code' during conversation in order to open a door
- The call will be disconnected after door opening procedure

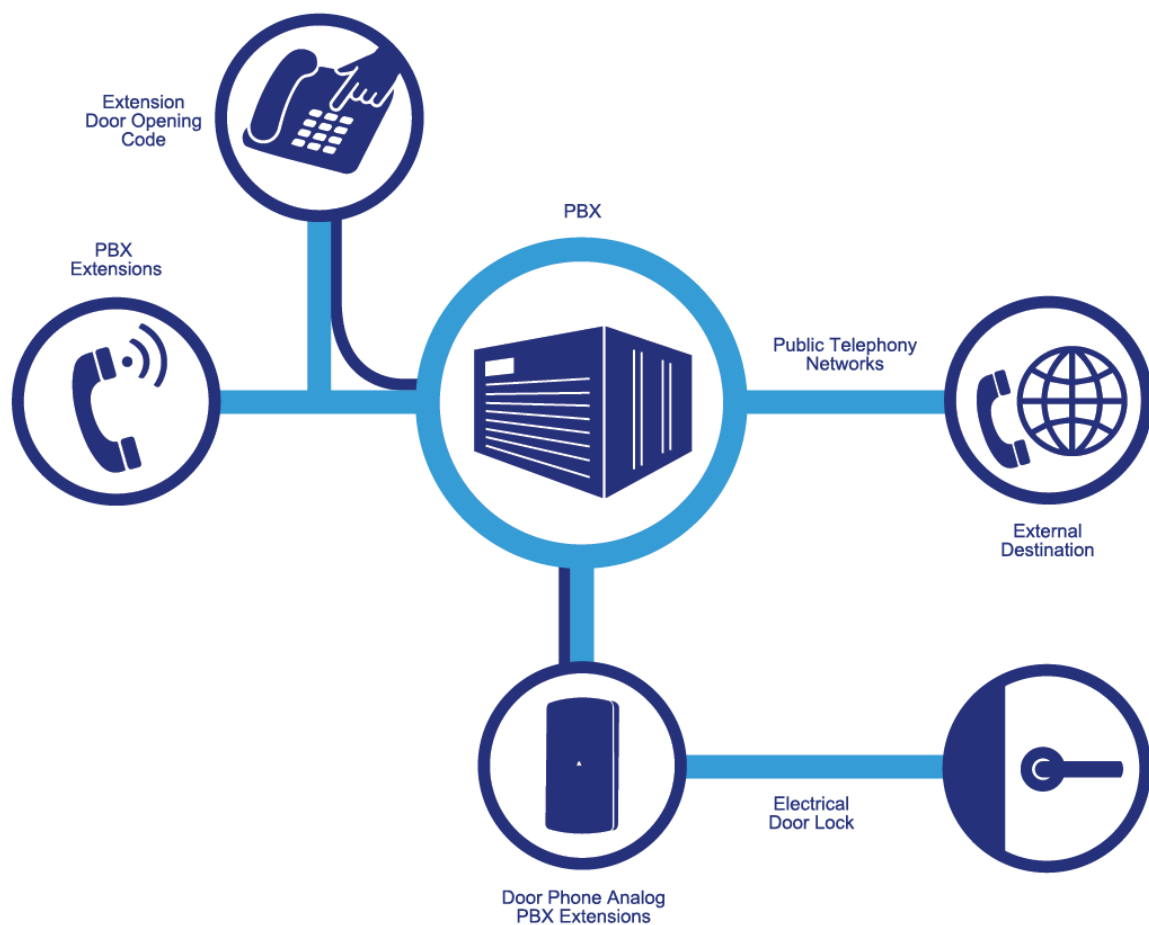


Figure 7-1 Door opening from remote Extension during conversation

Note:

1. The default Extension's Door opening code is **'5'**
2. The call will be disconnected automatically after door opening from extension
3. The 'Extension Door opening code' can be configured by using the Door phone programming codes

7.4 The maximum conversation time

The Door phone controls the conversation time duration. When preconfigured conversation time expired Door phone disconnects a call.

Note:

1. The default Maximum conversation duration time is 60 seconds
2. The Maximum conversation time interval can be configured by Door Phone programming codes in interval from 10 seconds to 99 seconds or with Unlimited value

7.5 Video Monitoring

SD-30x Door phones supports the external video camera. SD-30x Door phones provides 12 VDC in order to switch video camera on and off

12VDC can be provided to external video camera in following optional modes:

- Always Off
- Always On
- When  button is pressed
- When any keypad key is pressed (For Keypad edition only)
- When the telephone line is hang off , but disable in a programming mode (*911)
- When the telephone line is hang off

The video powering functional mode can be configured by using the Door Phone Programming codes (See Chapter 8.4).

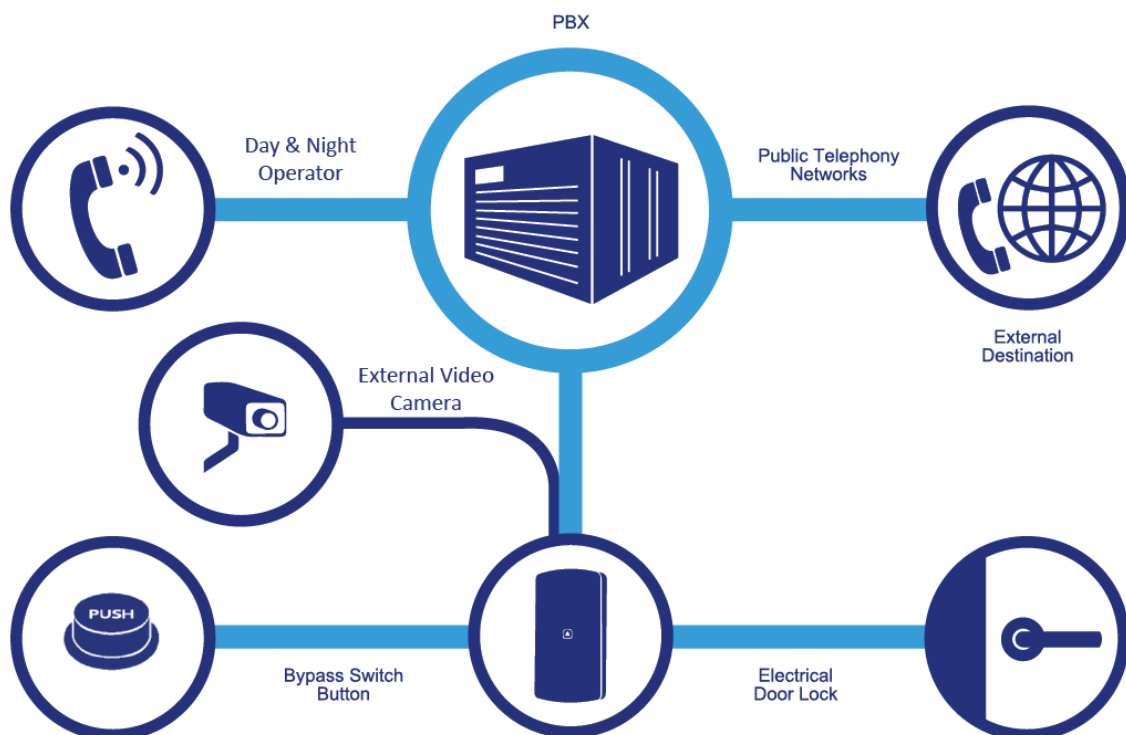


Figure 7-2 Video Monitoring Connections

8 Programming

8.1 Enter to programming mode

Programming can be released from any PBX extension telephone by calling to Door phone PBX extension number and using telephony keypad during conversation.

Note:

Door phone can be programmed by using DTMF tones during telephony conversation and programming session.

Entering Programming Mode

1. Dial the Door Phone's extension number from any touch-tone telephone.
2. Wait until the Door Phone answers and generates audio tone.
3. Dial  and wait for confirmation tone.
4. Enter the Administrator's Programming Access Password.

Note:

1. The default Administrator's password is **12345**
2. Upon typing incorrect password three consecutive times, Door phone disconnects
3. Will hear a double beep high tone confirmation tone every time when entering a correct programming parameter and command, or a low one-beep tone when entering an incorrect programming parameter / command.
4. The accompanied tone playback marked as '(tone)' in DTMF configuration codes table

To exit the programming mode

1. Dial  or programming login time limited by command  .

8.2 To change the Day/Night operational mode:

1. Dial the Door Phone's extension number from any touch-tone telephone.
2. Wait until the Door Phone answers and generates audio tone.
3. Dial and wait for confirmation tone.
4. Enter the Operator's Programming Access Password.
5. Enter to switch a Door Phone to the **Day** mode or Enter to switch a Door Phone to the **Night** mode

Note:

The default Operator's password is **54321**

8.3 To reset the unit to factory default:

1. Enter programming mode
2. Dial
3. A call disconnected and product restarts in it's default configuration

8.4 Door Phone Programming codes

Function	Command Code	Default value
Telephony Operations		
The Day/Night Operator destination number (DN) will be dialed when the 'Ring' button is pressed, respective to Day/Night operational mode.	* 1 0 0 + X (tone) + DN + # where: X = 1 Day X = 2 Night Destination number (DN) = Up to 20 digits, including *, #, Pause, and A-D characters. For special character input, see Chapter 8.5	Day – Empty Night - Empty
Delete a Day or Night Operator destination number (DN).	* 1 0 0 + X (tone) + # where: X = 1 Day X = 2 Night	
Programming 1-digit(s) prefix to allow dialing outgoing calls. When beginning with these digits, the door phone will process dialing. Note: Code is relevant for SD-40x keypad edition only	* 1 0 1 + Prefixes + # Prefix: digits 0–9 only To cancel this operation, enter: * 1 0 1 + # Example: Command *101 259 #(tone) allows dialing to destination numbers with first digit 2,5 and 9 Note: Parameter doesn't take effect on Speed Dial memories destination numbers dialing.	
The Maximum Conversation time (sec)	* 1 0 2 + XX where: XX = Seconds (10-99) 00 = Unlimited	60 seconds
Time interval between DTMF digits during outgoing dialing	* 1 0 3 + X where: X = 1-9 (Each step is 200 msec)	=2 (300 msec)
Inter Digits dialing time out (in sec)	* 1 0 4 + X where: X = Seconds 1~9	3 sec
Number of busy tone cycles in order to detect the busy signal	* 1 0 5 + X where: X= 0 ~ 9 (0 – no busy detection, 1 – 2 cycles, 2 – 4 cycles, etc.)	3 (6 cycles)
Busy signal Cadence configuration for Busy detection	* 1 0 6 + X (tone)+Y(tone)+NNNN where: X = 1 – Busy cadence 1 X= 2 – Busy cadence 2 Y = 1 – On, Y=2 – Off NNNN – time in msec	1 – 500 On, 500-Off 2- 250 On, 250 Off
Pause time after pick up a line and before dialing	* 1 0 7 + X where: X – time in sec 1-9	1
The minimum time in seconds to detect continuous tone	* 1 0 9 + X where: X –time in seconds 1-9	3
Assigning a Speed-Dial Memory destination number. Note: Code is relevant for SD-40x keypad edition only	* 1 1 0 + M(tone)+X (tone) + DN + # M-Memory bank: 0,1,2 or 3 X = a digit 1 through 9, DN = Destination number = Up to 20 digits, including *, #, Pause, and A-D characters.	Empty
Canceling a Speed-Dial destination Note: Code is relevant for SD-40x keypad edition only	* 1 1 0 + M(tone)+X (tone) + # M-Memory bank: 0,1,2 or 3	

	X = a digit 1 through 9	
Door Opening Codes		
Changing the Opening door Access Code Note: Code is relevant for SD-40x keypad edition only	$\ast \textcircled{2} \textcircled{0} \textcircled{0} + \text{CODE} + \textcircled{\#}$ Door Access Code 'CODE' can be up to 9 numeric digits. Do not use the * or # keys.	4321
Digit(s) code to open the door from dialed destination number during conversation	$\ast \textcircled{2} \textcircled{0} \textcircled{1} + \text{CODE} + \textcircled{\#}$ where: CODE= Digits (0~9) Up to 4 digits.	5
Door opening time in seconds	$\ast \textcircled{2} \textcircled{0} \textcircled{3} + X$ where: X = Number of seconds (1~9)	3 sec
Telephony Line Configuration		
Loop disconnect detection	$\ast \textcircled{3} \textcircled{0} \textcircled{0} + X$ where: X = 0 off X = 1 on	1-On
Loop disconnect detection time (msec)	$\ast \textcircled{3} \textcircled{0} \textcircled{1} + XXXX$ Where X – time in msec	1200 msec
Speaker volume adjustment	$\ast \textcircled{3} \textcircled{0} \textcircled{2} + X$ Where X = 1-8	6
Microphone volume adjustment	$\ast \textcircled{3} \textcircled{0} \textcircled{3} + X$ Where X = 1-9	6
Continuous tone detection time	$\ast \textcircled{3} \textcircled{0} \textcircled{5} + X$ Where X – time in sec	3
Video Camera Functionality Configuration		
External Video Camera functionality configuration codes	$\ast \textcircled{4} \textcircled{0} \textcircled{0} + X$ where X = 0 camera off X = 1 camera on X = 2 camera powered when 'Ring' button is pressed X = 3 camera powered when any key is pressed X = 4 camera powered when the telephone line is hang off , but disable in a programming mode (*911) X = 5 camera powered when the telephone line is hang off	0-Off
Administration		
Enter to programming mode	$\ast \textcircled{9} \textcircled{1} \textcircled{1}$	
Switch Door Phone to the Day/Night operational mode Note: Allowed for System Operator as well	$\ast \textcircled{9} \textcircled{0} \textcircled{1}$ - Day Mode $\ast \textcircled{9} \textcircled{0} \textcircled{2}$ - Night mode	Day
Programming login time	$\ast \textcircled{9} \textcircled{0} \textcircled{3} + XXX$ Where XXX time in seconds 000-999	300 – 5 minutes
Enable / disable M1/M2/M3 memories banks	$\ast \textcircled{9} \textcircled{0} \textcircled{4} + X + Y$ Where X=1 , Speed dialing Memories M1 group X=2 , Speed dialing Memories M2 group X=3 , Speed dialing Memories M3 group Y=1-Enable, Y=0 Disable	Disabled
Reset device to its factory default	$\ast \textcircled{9} \textcircled{2} \textcircled{0}$	
System operator's up to 9 digits password settings	$\ast \textcircled{9} \textcircled{3} \textcircled{0} + \text{PASSWORD}$	54321
Changing the Administrator programming password	$\ast \textcircled{9} \textcircled{4} \textcircled{0} + \text{PASSWORD}$ Programming access password must be up to nine numeric digits 0~9. Do not use the * or # keys.	12345

8.5 Special DTMF Characters

Special character/s in destination numbers can be entered using the telephone keypad during programming procedure. The following table shows the corresponding keypad entries needed for creating special DTMF characters.

DTMF CHAR.	NUMBER TO DIAL
Digits 0-9	① ~ ⑨
*	① ②
Pause	① ③, configure a 1 second pause
#	① ④
A	① ⑤
B	① ⑥
C	① ⑦
D	① ⑧

9 Technical specification

Power Supply (External)	12V AC@ 1.6 A (supplied with unit)
Relay Switching Current	2A max
Supported Line Voltage	24-72V DC
DC Leakage	< 10 μ A
On-Hook Insulation (Resistance Between Line Terminal and Ground)	0-100V DC > 5M Ω 100-200 V DC > 30 K Ω 500V AC/50Hz > 20K Ω 100V AC/25Hz > 100K Ω
Ring Capacitor	0.1 μ F $\pm$ 10%
On-Hook Impedance	50V DC, 30V AC/25Hz>3000 Ω
Ring Detect	27-100 V AC/16-60 Hz
Ring Detection time	80 msec
DC Resistance (Off-Hook)	24-66V DC @ 20-100mA/350 Ω
Impedance (Off-Hook)	300-3300Hz 500-700 Ω
Imbalance Ratio	300-3300Hz > 46dB
Return Loss	300-3300Hz > 18dB
Current During Break	< 700 μ A
DTMF Transmission: Frequency Tolerance Frequency Level (High) Frequency Level (Low)	$\pm$ 1.5% -6 to -8dBm -8 to -10dBm
Inter-Digit Pause Time	70-80ms
Dimensions	Indoor Unit: 182 L x 94 W x 36 H (mm) (with rubber pad) Indoor Unit Mini Housing: 130 L x 65.5 W x 33 H (mm) (with rubber pad) Outdoor Unit: 182 L x 94 W x 36 H (mm)
Weight	Indoor Unit : 550g (net) Indoor Unit Mini Housing: 282.4g (net) Outdoor Unit:.....700g (net)
Operating Temperature	Outdoor: -20°C to +50°C/4°F to 122°F Indoor: 0°C to +35°C/32°F to 95°F